

REMARKS

Reconsideration and allowance of the claims are respectfully requested.

Claims 1-4, 7-11, 16, 19-24, 29, 30, 32-41, 44-54, and 78-109 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,525,330 (Greene). This rejection is respectfully traversed.

As presently recited in claims 1-6, Applicant provides a vest which includes a number of electrodes at predetermined positions on the vest, such as electrodes individually disposed at the V₁- V₆ positions. These positions V₁-V₆ are provided in the vest for a patient having any individual one of a plurality of different sizes such as small, medium and large. A plurality of amplifiers also are provided, each connected to an electrode disposed at an individual one of the positions V₁-V₆ to indicate the characteristics of the heart signal of the patient at the individual one of the V₁-V₆ positions for any individual one of the patient sizes. During ambulatory movements of the patient, each amplifier receives noise signals from the individual one of the V₁-V₆ positions and processes those signals to obtain a noise level below that affecting the characteristics of the signals at the electrodes. Each amplifier also provides the signal with characteristics corresponding to the characteristics of the signal at the associated electrode positions.

In this way, a single vest is provided with electrodes at the V₁-V₆ positions for patients having any individual one of different sizes. This single vest is easily adaptable to different patients of different sizes by positioning the electrodes at the predetermined V₁-V₆ positions on the vest corresponding to that particular patient size. Applicant thus provides a vest with substantially universal adaptability for patients having any individual one of different sizes. In this way, a single vest can be used by a doctor to monitor the heart beats of a large number of patients.

Judging from the prior art cited by the Examiner, no one prior to applicant has provided a vest which performs on a substantially universal basis for patients of different size. This prior art includes Greene cited by the Examiner. No one has provided a universal vest for a patient having any individual one of a plurality of different sizes even though doctors have been monitoring heart beats of patients for generations.

The Greene patent, issued more than thirty-six (36) years ago, discloses an apparatus which is exactly the opposite in concept and function to applicant's invention. Greene actually teaches away from applicant's invention rather than toward applicant's invention.

Contrary to the Examiner's assertions, the fitting garment 10 of Greene is not construed to be worn by a patient regardless of whether the patient has a small, medium or large size. Rather, Greene states that the fitting garment is provided "in a number of standard sizes" (Col. 1, lines 53-54), indicating the different sizes are used for patients of different size. Unlike the present invention, the fitting garment of Greene is not intended to be worn by the patient regardless of the patient's size.

Moreover, Greene does not disclose a fitting garment in which the individual positions in the garment are predetermined positions which correspond to predetermined positions in the patient for each of different sizes of patients. If anything, Green teaches in the opposite direction. In Green, the placement of the electrodes on the fitting garment is "personalized to a particular individual for whom the garment is being fitted." (Col. 1, lines 56-58). With Green, the electrodes are attached to the garment in a personalized manner unique to each individual patient under the direction of a physician or other person trained in the placement of cardiac electrodes (Col. 1, lines 52-58). There are no predetermined positions for receiving electrodes on the garment corresponding to predetermined positions in the patient, such as the V₁-V₆ positions, for each of different sizes of patients.

In short, whereas Applicant provides a universally adaptable vest with predetermined electrode positions on the vest for a patient having any individual one of a plurality of different sizes, Greene provides a vest custom made for a single patient with size characteristics individually adapted only to the single patient. Because of this, Greene teaches away from applicant's invention rather than toward applicant's invention.

A doctor has to provide only a single one of applicant's vests in order to monitor the doctor's patients, whether the patients are of a small, medium or large size. In contrast, a doctor using Greene's vests has to provide a separate vest for each of the doctor's patients, particularly since Greene's vest is custom made to fit only a single sized patient. This provides complications regarding storage space, expense accountability and time when the doctor uses Greene's vests to monitor the heart beats of the doctor's patients.

There is yet another significant distinction between Green and the present invention as recited in claims 1-6 - amplifiers connected directly to respective electrodes are not taught by Greene. The Examiner has not cited any prior art which discloses a vest with a plurality of electrodes and with amplifiers attached directly to the electrodes. The Examiner also has not cited any prior art reference which discloses amplifiers having characteristics of eliminating noise levels below that providing measurable interference with the signals on the electrodes. This is certainly not disclosed in Greene.

In applicant's invention, as recited in several of the claims, amplifiers are connected directly to the electrodes. This connection helps to reduce noise from the signals and preserves original signals from the heart. Greene does not disclose any amplifier, let alone an amplifier that is directly connected to an electrode.

The Examiner attempts to take "official notice" that it is well known to use amplifiers when dealing with biological signals in order to reduce noise, buffer signals, and provide a gain or amplitude increase.

However, the alleged Official Notice does not indicate that any prior art reference substantially reduces noise to a level below that materially affecting the signals at the electrodes. The Official Notice also does not disclose any amplifiers connected directly to recording electrodes for reducing noise to a level preventing the noise from materially affecting the signals at the amplifiers from the electrodes. Furthermore, the Official Notice does not disclose that the amplifiers of the prior art were adapted to be connected directly to electrodes in a vest to be worn by a patient having any individual one of a plurality of different sizes of the patient. As previously indicated, Greene does not disclose any of this. The other references cited by the Examiner also do not disclose this.

The Examiner's attempt to rely on "Official Notice" that it would have been obvious to directly connect a unity-gain amplifier to an electrode to insure that doing a measurement of a voltage on the electrodes does not disturb the circuit providing the voltage is especially inappropriate.

As the Examiner knows, "Official Notice" without documentary evidence can be taken only when the facts asserted to be well-known are capable of "instant and unquestionable demonstration as being well known" and are of "notorious character". It is not proper for an Examiner to take official notice of facts without citing a prior art reference when the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well known. Where, as here, specific knowledge of the art is asserted, such assertion must always be supported by citation to some reference. It is never appropriate to rely on "common knowledge" in the art without evidentiary support in the record as the principal evidence upon which a rejection is based, yet this is precisely what the Examiner has attempted to do here with respect to the "direct connection" feature. MPEP 2144.03

It is significant that the Examiner seeks to rely on "Official Notice" in lieu of a supporting reference for the "direct connection" feature in an area of art which the Examiner has characterized as "extremely old". One would think that citation to a

reference would be easy to do if this so-called "well-known" art was in fact as notorious as the Examiner alleges it to be.

Claims 7-11, 16, 19-24, 29, 30, 32-41, 44-54 and 78-109 are allowable over the references for similar reasons to those discussed above.

For example, independent claim 7 calls for a vest having a plurality of predetermined positions, wherein each position corresponds to an individual one of a plurality of predetermined positions in a patient for a patient having an individual one of a plurality of different sizes. That feature is not taught or suggested by Green.

Independent claim 19 calls for a vest constructed to be worn by a patient when the patient has any individual one of a small, medium or large size, wherein a plurality of predetermined positions are provided on the vest, the positions disposed in rows and columns and corresponding to different positions in the patient. No reference teaches that feature.

Independent claim 32 calls for a vest constructed to be worn by a patient when the patient has any individual one of a plurality of different sizes, with a plurality of predetermined positions disposed on the vest in rows and columns in an upper right portion of the vest and in rows and columns in a lower left portion of the vest, each of said predetermined positions on the vest corresponding to a patient of a particular size. No reference teaches that feature.

Independent claim 40 calls for a vest constructed to be worn by a patient for any one of a plurality of different sizes of the patient, wherein electrodes are disposed in predetermined ones of positions in the upper right portion and the lower left portion of the vest depending upon the size of the patient for providing signals indicative of the characteristics of the patient's heart at the particular positions for any individual one of different sizes of the patient, each of the electrodes for patients of individual ones of the

different sizes being disposed in columns different from the other electrodes for that patient. No reference teaches that feature.

Independent claim 44 calls for a vest constructed to be worn by a patient having any individual one of a plurality of sizes, with a plurality of predetermined positions in the vest, each position corresponding to a patient of different size. No reference teaches that feature.

Independent claim 49 calls for a vest constructed to be worn by a patient for any individual one of a plurality of different sizes of the patient, wherein a plurality of predetermined positions are provided in the vest, each position corresponding to a patient of different size. No reference teaches that feature.

Independent claim 78 calls for a vest constructed to be worn by a patient when the patient has any individual one of a small, medium or large size, and a plurality of electrodes including V₁ and V₂ electrodes disposed in predetermined positions in a first portion of the vest when the patient has any individual one of the small, medium and large sizes, the V₁ and V₂ electrodes being disposed in a common row individual to the patient of the small, medium or large size, the columnar positions of the V₁ and V₂ electrodes in the row being dependent upon whether the patient has the small, medium or large size. No reference teaches that feature.

Independent claim 87 calls for a vest constructed to be worn by a patient when the patient has any individual one of a small, medium or large size, a first portion of the vest being provided with a plurality of rows and a plurality of columns, a plurality of electrodes including V₄, V₅ and V₆ electrodes being disposed in predetermined positions in the first portion of the vest for the patient having an individual one of the small, medium and large sizes, the V₄, V₅ and V₆ electrodes being disposed in the first portion of vest in a common row which is dependent upon whether the patient has the small, medium or large size.

Claim 92 calls for a vest constructed to be worn by a patient regardless of whether the patient has a small, medium or large size, a plurality of predetermined positions in the vest, each position corresponding to a particular anatomical location on the patient's body for a patient having an individual one of the small, medium or large sizes and being provided with characteristics to receive an individual one of electrodes, wherein the plurality of the specified positions are disposed such that a first arrangement of the electrodes on the vest provides signals at said specified positions in the patient's heart when the patient has a small size, a second arrangement of the electrodes on the vest provides signals at said specified positions in the patient's heart when the patient has a medium size, and a third arrangement of the electrodes on the vest provides signals at said specified positions in the patient's heart when the patient has a large size and wherein the first, second and third arrangements are different from one another. No reference teaches those features.

Because the invention is new and unobvious, and because new and unobvious features of the invention have been specifically set forth in the claims, and because the references do not suggest those new and unobvious features, reconsideration and allowance of the claims are requested.

Should the Examiner have any questions concerning this Amendment, Applicants request the Examiner to contact the Applicants' attorney, Craig Bailey, at (310) 824-5555.

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Respectfully submitted,

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